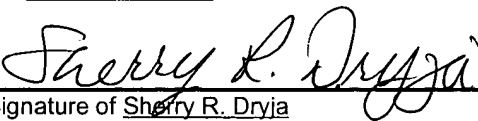# ABSTRACT OF THE DISCLOSURE

A variational Relevance Vector Machine (RVM) is disclosed. The RVM is a probabilistic basis model. Sparsity is achieved through a Bayesian treatment, where a prior is introduced over the weights governed by a set of what are referred to as

5   hyperparameters – one such hyperparameter associated with each weight. An approximation to the joint posterior distribution over weights and hyperparameters is iteratively estimated from the data. The posterior distribution of many of the weights is sharply peaked around zero, in practice. The variational RVM utilizes a variational approach to solve the model, in particular using product approximations to obtain the

10   posterior distribution.